IN THE CLAIMS:

Please AMEND claim 1 and ADD new claims 20 and 21 in accordance with the following:

1. (CURRENTLY AMENDED) A method of detecting a radial tilt of a disc, the method comprising:

comparing phases of first summed signals obtained from a first plurality of signals that are generated when first light-receiving units of a photo diode receive light from a laser beam that is reflected from a surface of the disc to generate an first phase comparison signal;

comparing phases of second summed signals obtained from a second plurality of signals that are generated when second light-receiving units of the photo diode receive light from the laser beam that is reflected from the surface of the disc to generate ~~ana~~ a second phase comparison signal; and

detecting the radial tilt based on a phase difference of the second and first phase comparison signals obtained when the laser beam crosses a track on the disc.

2. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the detecting of the radial tilt comprises reading a level value of the second phase comparison signal when a level value of the first phase comparison signal is substantially zero.

3. (ORIGINAL) The method of claim 2, wherein the detecting of the radial tilt comprises multiplying the read value by a proportional constant.

4. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the second and first light-receiving units are substantially rectangular, two sides of light-receiving surfaces of the second light-receiving units and two sides of light-receiving surfaces of the first light-receiving units disposed in a track direction of the disc are substantially identical, and the other two sides of the light-receiving surfaces of the first light-receiving units disposed to be substantially perpendicular to the track direction of the disc are longer than the other two sides of the light-receiving surfaces of the second light-receiving units disposed to be substantially perpendicular to the track direction of the disc.

5. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the second plurality of signals that second light-receiving units receive to generate the second phase comparison signal are portions of -1^{st}-order and 1^{st}-order beams of light.

6. (PREVIOUSLY PRESENTED) The method of claim 5, wherein the first plurality of signals the first light-receiving units receive to generate the first phase comparison signal are a 0^{th}-order beam of light and one of -1^{st}-order and 1^{st}-order beams of light.

7. (PREVIOUSLY PRESENTED) An apparatus detecting a radial tilt of a disc, the apparatus comprising:

a pickup unit in which an octant photo diode is mounted;

a phase comparator comparing phases of first summed signals obtained from a first plurality of signals that are generated when first light-receiving units of the octant photo diode receive light from a laser beam that is reflected from a surface of the disc so as to generate an first phase comparison signal, and comparing phases of second summed signals obtained from a second plurality of signals that are generated when second light-receiving units of the octant photo diode receive light from the laser beam that is reflected from the surface of the disc so as to generate a second phase comparison signal; and

a tilt detector detecting the radial tilt based on a phase difference of the second and first phase comparison signals that are generated by the phase comparator when the laser beam crosses a track on the disc.

8. (PREVIOUSLY PRESENTED) The apparatus of claim 7, wherein the tilt detector reads a level value Rs of the second phase comparison signal when a level value of the first phase comparison signal is substantially zero.

9. (ORIGINAL) The apparatus of claim 8, wherein the tilt detector multiplies the read value Rs by a proportional constant calculating a radial tilt value.

10. (PREVIOUSLY PRESENTED) The apparatus of claim 7, wherein the second and first light-receiving units are substantially rectangular, two sides of light-receiving surfaces of the second light-receiving units and two sides of light-receiving surfaces of the first light-receiving units disposed in a track direction of the disc are substantially identical, and the other two sides of the light-receiving surfaces of the first light-receiving units that are disposed to be substantially perpendicular to the track direction of the disc are longer than the other two sides of the light-receiving surfaces of the second light-receiving units that are disposed to be substantially perpendicular to the track direction of the disc.

11. (PREVIOUSLY PRESENTED) The apparatus of claim 7, wherein the second plurality of signals the second light-receiving units receive to generate the second phase comparison signal are portions of -1^{st}-order and 1^{st}-order beams of light.

12. (PREVIOUSLY PRESENTED) The apparatus of claim 11, wherein the first plurality of signals that first light-receiving units receive to generate the first phase comparison signal are a 0^{th}-order beam of light and one of -1^{st}-order and 1^{st}-order beams of light.

13. (PREVIOUSLY PRESENTED) A disc drive apparatus to drive and control tilt of a disc, comprising:

a drive unit to rotate the disc;

a pickup unit in which an octant photo diode is mounted;

a focusing and seek servo control system to move a laser beam spot to a target track on the disc;

a rotating servo control system to control the rotation of the disc;

a tracking servo control system to move the laser beam spot to follow the target track during the rotation of the disc; and

a tilt detector unit, wherein the tilt detector unit comprises:

a phase comparator comparing phases of first summed signals obtained from a first plurality of signals that are generated when first light-receiving units of the octant photo diode receive light from a laser beam that is reflected from a surface of the disc so as to generate an first phase comparison signal, and comparing phases of second summed signals obtained from a second plurality of signals that are generated when second light-receiving units of the octant photo diode receive light from the laser beam that is reflected from the surface of the disc so as to generate an second phase comparison signal; and

a tilt detector detecting the radial tilt based on a phase difference of the second and first phase comparison signals that are generated by the phase comparator when the laser beam crosses a track on the disc.

14. (PREVIOUSLY PRESENTED) A disc recording/reproducing apparatus, comprising:

at least one of a recording part to record data on a disc and a reproducing part to reproduce data that had been recorded on a disc;

a mounting fixture to mount a disc drive;

a connector to provide a path for the data from the mounted disc to the at least one of recording part and reproducing part; and

a disc drive mounted in the mounting fixture, wherein the disc drive comprises:

a drive unit to rotate the disc;

a pickup unit in which an octant photo diode is mounted;

a focusing and seek servo control system to move a laser beam spot to a target track on the disc;

a rotating servo control system to control the rotation of the disc;

a tracking servo control system to move the laser beam spot to follow the target track during the rotation of the disc; and

a tilt detector unit, wherein the tilt detector unit comprises:

a phase comparator comparing phases of first summed signals obtained from a first plurality of signals that are generated when first light-receiving units of the octant photo diode receive light from a laser beam that is reflected from a surface of the disc so as to generate an first phase comparison signal, and comparing phases of second summed signals obtained from a second plurality of signals that are generated when second light-receiving units of the octant photo diode receive light from the laser beam that is reflected from the surface of the disc so as to generate an second phase comparison signal; and

a tilt detector detecting the radial tilt based on a phase difference of the second and first phase comparison signals that are generated by the phase comparator when the laser beam crosses a track on the disc.

15. (PREVIOUSLY PRESENTED) A method of detecting a radial tilt of a disc, comprising:

summing a plurality of signals received when a laser beam crosses a track on the disc, the signals being generated by a reception of light of the laser beam reflected from the surface of the disc;

comparing phases of the summed signals; and

analyzing the compared phases and detecting a tilt based on the analysis of the compared phases.

16. (PREVIOUSLY PRESENTED) A tilt detecting apparatus to detect a tilt of a disc, comprising:

a photodiode with a plurality of sectors to generate signals in accordance with a reception of light from a laser beam being reflected from a surface of the disc at each sector;

a phase comparator comparing phases of the signals generated by the plurality of sectors of the photodiode; and

a tilt detector analyzing the compared phases of signals when the laser beam crosses a track on the disc.

17. (PREVIOUSLY PRESENTED) A computer readable medium encoded with processing instructions implementing a method of detecting a radial tilt of a disc, the method comprising:

comparing phases of first summed signals obtained from a first plurality of signals that are generated when first light-receiving units of a photo diode receive light from a laser beam that is reflected from a surface of the disc to generate an first phase comparison signal;

comparing phases of second summed signals obtained from a second plurality of signals that are generated when second light-receiving units of the photo diode receive light from the laser beam that is reflected from the surface of the disc to generate an second phase comparison signal; and

detecting the radial tilt based on a phase difference of the second and first phase comparison signals obtained when the laser beam crosses a track on the disc.

18. (PREVIOUSLY PRESENTED) The computer readable medium, as set forth in claim 17, wherein the method of detecting the radial tilt comprises reading a level value of the second phase comparison signal when a level value of the first phase comparison signal is substantially zero.

19. (ORIGINAL) The computer readable medium as set forth in claim 18, wherein the method of detecting the radial tilt comprises multiplying the read value by a proportional constant.

20. (NEW) The method of claim 1, wherein the detecting of the radial tilt comprises detecting the radial tilt when the laser beam crosses the track on the disc without tracking control.

21. (NEW) The method of claim 1, wherein a path through which the laser beam crosses the track is substantially perpendicular to the track.